

Application No. 10/803,255

Status of the Claims

1. (Currently Amended) A method for input ideographic characters comprising the steps of:

5 (a) entering an input sequence into a user input device;

wherein said user input device comprises:

a plurality of input means, each of said input means being associated with any of a plurality of strokes ~~or~~ and a plurality of phonetic characters, and an input sequence being generated each time when an
10 input means is selected by a user into said user input device, wherein said user selection of said input means is alternatively associated with any of said plurality of strokes and said plurality of phonetic characters;

~~data consisting of~~ comprising a plurality of input sequences and, associated with each input sequence, an input method specific database
15 containing a plurality of input sequences and, associated with each input sequence, any of a set of phonetic sequences whose spellings correspond to the input sequence ~~or~~ and a set of strokes stroke sequences corresponding to the input sequence; and

an ideographic database associated with both phonetic input and
20 stroke input, said ideographic database containing a set of ideographic character sequences, wherein each ideographic character contains an ideographic index, a plurality of stroke indices to corresponding stroke sequences and a plurality of phonetic indices to corresponding phonetic sequences;

25 (b) comparing the input sequence with said input method specific database and finding any of

stroke indices corresponding to matching strokes stroke entries, and

phonetic indices corresponding to matching ~~or~~ phonetic entries and
30 said matching stroke entries or phonetic entries;

(c) converting any of

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said matching stroke indices ~~to~~ associated with said matching
stroke entries to matching ideographic indices; and

said matching phonetic indices associated with said matching or
phonetic entries to matching ideographic indices; and

5 (d) retrieving matching ideographic character sequences from said
ideographic database by said matching ideographic indices; and

~~(e) optionally displaying one or more of said matched ideographic~~
~~character sequences.~~

10 2. (Original) The method of Claim 1, wherein said stroke indices are indices of
strokes sorted by stroke sequences in a stroke input system.

3. (Original) The method of Claim 2, wherein said stroke input system is a five-
stroke or an eight-stroke system.

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4. (Currently Amended) The method of Claim 1, further comprising the step of:
optionally displaying one or more of said matched ideographic character
sequences wherein said phonetic indices are indices of phonetic characters
sorted by actual spelling in a phonetic input system.

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5. (Original) The method of Claim 4, wherein said phonetic input system is a
Pinyin system or a Zhuyin system.

25 6. (Original) The method of Claim 1, wherein said phonetic indices are indices
of input means in a phonetic input system.

7. (Original) The method of Claim 1, further comprising the step of:
prioritizing stroke or phonetic sequences that match an input sequence
and prioritizing ideographic character sequences that match a stroke or phonetic
30 sequence according to a linguistic model.

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8. (Original) The method of Claim 7, wherein said linguistic model comprises at least one of:

- number of total keystrokes in an ideograph;
- radical of an ideograph;
- 5 radical and number of strokes of a radical;
- alphabetical order;
- frequency of occurrence of ideographic character sequences, stroke sequences or phonetic sequences in formal, conversational written, or conversational spoken text;
- 10 frequency of occurrence of ideographic character sequences, stroke sequences or phonetic sequences when following a preceding character or characters;
- grammar of the surrounding sentence;
- application context of current input sequence entry; and
- 15 recency of use or repeated use of stroke, phonetic or ideographic character sequences by the user or within an application program.

9. (Original) The method of Claim 1, wherein said phonetic sequences comprise single syllables.

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10. (Original) The method of Claim 1, wherein said phonetic sequences comprise single and multiple syllables.

11. (Original) The method of Claim 1, wherein said phonetic sequences
25 comprise user generated sequences.

12. (Original) The method of Claim 11, wherein in absence of matching phonetic sequences in said database, a sequence of matching phonetic sequences is automatically generated based on single and optionally multiple
30 syllable phonetic sequences.

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13. (Original) The method of Claim 12, wherein said sequence of matching phonetic sequences is narrowed down through user interaction.
14. (Original) The method of Claim 12, wherein a sequence of matching ideographic character sequences is automatically generated based on matching phonetic sequences to ideographic character sequences.
15. (Original) The method of Claim 14, wherein a sequence of matching ideographic character sequences is narrowed down through user interaction.
16. (Original) The method of Claim 7, further comprising the step of: once an ideographic character sequence is selected, changing the associated priority of said matching phonetic sequence and sequence of ideographic characters.
17. (Original) The method of Claim 1, wherein the user can specify an explicit ideographic character separator.
18. (Original) The method of Claim 1, further comprising the step of: when the user enters a sequence of phonetic characters, returning a sequence of phonetic sequences of exact matches and predictions that partially match.
19. (Original) The method of Claim 18, wherein said sequence of phonetic sequences is ordered according to a linguistic model.
20. (Original) The method of Claim 19, wherein said linguistic model comprises at least one of:
- alphabetical order;
 - frequency of occurrence of phonetic sequences or ideographic character sequences in formal or conversational written text;

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frequency of occurrence of phonetic sequences or ideographic when following a preceding character or characters;
grammar of the surrounding sentence;
application context of current character sequence entry; and
5 recency of use or repeated use of phonetic sequences by the user or within an application program.

21. (Original) The method of Claim 1, further comprising the step of:
once the user has selected a sequence of ideographic characters,
10 presenting the user with a list of sequences of one or more ideographic characters.

22. (Original) The method of Claim 21, wherein said list of sequences is ordered according to a linguistic model.

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23. (Original) The method of Claim 22, wherein said linguistic model comprises at least one of:
number of total keystrokes in an ideograph;
radical of an ideograph;
20 radical and number of strokes of radical;
alphabetical order;
frequency of occurrence of ideographic characters in formal or conversational written text;
frequency of occurrence of ideographic characters when following a
25 preceding character or characters;
grammar of the surrounding sentence;
application context of current character entry; and
recency of use or repeated use of ideographic characters by the user or within an application program.

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24. (Original) The method of Claim 1, wherein the user can enter partial syllables for each of the multiple syllable words.

25. (Currently Amended) The method of Claim 24, wherein the number of
5 partial keystrokes for each partial syllable is one.

26. (Currently Amended) The method of Claim 1, wherein one of said plurality of inputs is associated with a special wildcard input that is associated with zero or one of any of said strokes and said phonetic characters.
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27. (Original) The method of Claim 1, wherein one of said plurality of inputs is associated with a special wildcard input that is associated with zero or one of said phonetic characters.

15 28. (Original) The method of Claim 1, wherein said phonetic indices are indices of phonetic characters sorted by actual spelling in a phonetic input system.

29. (Currently Amended) A system for receiving input sequences entered by a user and generating textual output in Chinese language, said system comprising:
20 a user input device having a plurality of input means, each of said input means being associated with any of a plurality of strokes or and a plurality of phonetic characters, an input sequence being generated each time when an input means is selected by said user into said user input device, wherein said user selection of said input means is alternatively associated with any of said
25 plurality of strokes and said plurality of phonetic characters;

an input method specific database containing a plurality of input sequences and, associated with each input sequence, any of a set of phonetic sequences whose spellings correspond to the input sequence or and a set of strokes stroke sequences corresponding to the input sequence;

30 an ideographic database associated with both phonetic input and stroke input, said ideographic database containing a set of ideographic character

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sequences, wherein each ideographic character contains an ideographic index, a plurality of stroke indices to corresponding stroke sequences and a plurality of phonetic indices to corresponding phonetic sequences;

5 means for comparing the input sequence with said input method specific database and finding any of:

stroke indices corresponding to matching strokes stroke entries,
and

phonetic indices corresponding to or matching phonetic entries and
said matching stroke entries or phonetic entries;

10 means for converting any of

said matching stroke indices to associated with said matching
stroke entries to matching ideographic indices; and

said matching phonetic indices associated with said matching or
phonetic entries to matching ideographic indices;

15 means for retrieving matching ideographic character sequences from said ideographic database by said matching ideographic indices; and

an output device for displaying one or more matched stroke or phonetic entries, and matched ideographic characters.

20 30. (Currently Amended) The method system of Claim 28 29, wherein said stroke indices are indices of strokes sorted by stroke sequences in a stroke input system.

25 31. (Original) The system of Claim 29, wherein said stroke input system is 5-stroke or 8-stroke system.

30 32. (Currently Amended) The system of Claim 28 29, wherein said phonetic indices are indices of phonetic characters sorted by actual spelling in a phonetic input system.

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33. (Currently Amended) The system of Claim ~~34~~ 32, wherein said phonetic input system is a Pinyin system or a Zhuyin system.

34. (Currently Amended) The system of Claim ~~28~~ 29, wherein said phonetic indices are indices of input means in a phonetic input system.

35. (Currently Amended) The system of Claim ~~28~~ 29, further comprising:
means for prioritizing stroke or phonetic sequences that match an input sequence and prioritizing ideographic character sequences that match a matching stroke or phonetic sequence according to a linguistic model.

36. (Currently Amended) The system of Claim ~~34~~ 35, wherein said linguistic model comprises at least one of:
number of total keystrokes in an ideograph;
radical of an ideograph;
radical and number of strokes of radical;
alphabetical order;
frequency of occurrence of ideographic character sequences, stroke sequences or phonetic sequences in formal or conversational written text;
frequency of occurrence of ideographic character sequences, stroke sequences or phonetic sequences when following a preceding character or characters;
grammar of the surrounding sentence;
application context of current input sequence entry; and
recency of use or repeated use of stroke, phonetic or ideographic character sequences by the user or within an application program.

37. (Currently Amended) The system of Claim ~~28~~ 29, wherein said phonetic sequences comprise single syllables.

38. (Currently Amended) The system of Claim ~~28~~ 29, wherein said phonetic sequences comprise both single and multiple syllables.

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39. (Currently Amended) The system of Claim 28 29, wherein said phonetic sequences comprise user generated sequences.
- 5 40. (Currently Amended) The system of Claim ~~38~~ 39, wherein in absence of matching phonetic sequences in said database, a sequence of matching phonetic sequences is automatically generated based on single and optionally multiple syllable phonetic sequences.
- 10 41. (Currently Amended) The system of Claim ~~39~~ 40, wherein said sequence of matching phonetic sequences is narrowed down through user interaction.
42. (Currently Amended) The system of Claim ~~39~~ 40, wherein a sequence of matching ideographic character sequences is automatically generated based on
15 matching phonetic sequences to ideographic character sequences.
43. (Currently Amended) The system of Claim 44 42, wherein a sequence of matching ideographic character sequences is narrowed down through user interaction.
- 20 44. (Currently Amended) The system of Claim ~~34~~ 35, further comprising:
means for changing the associated priority of the matching phonetic sequence and the sequence of ideographic characters once an ideographic character sequence is selected.
- 25 45. (Currently Amended) The system of Claim 28 29, wherein the user can specify a particular tone for the phonetic syllable.

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46. (Currently Amended) The system of Claim ~~28~~ 29, wherein one of said plurality of inputs is associated with a special wildcard input that is associated with any or all tones.

5 47. (Currently Amended) The system of Claim ~~28~~ 29, wherein the user can specify an explicit ideographic character separator.

48. (Currently Amended) The system of Claim ~~28~~ 29, wherein once the user enters a sequence of phonetic characters, the user is returned a sequence of
10 phonetic sequences of exact matches and predictions that partially match.

49. (Currently Amended) The system of Claim ~~47~~ 48, wherein the said sequence is ordered according to the frequency of use based on a linguistic model.

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50. (Currently Amended) The system of Claim ~~48~~ 49, wherein said linguistic model comprises at least one of:

number of total keystrokes in an ideograph;
radical of an ideograph;
20 radical and number of strokes of radical;
alphabetical order;
frequency of occurrence of phonetic sequences or ideographic character sequences in formal or conversational written text;
frequency of occurrence of phonetic sequences or ideographic when
25 following a preceding character or characters;
grammar of the surrounding sentence;
application context of current character sequence entry; and
recency of use or repeated use of phonetic sequences by the user or within an application program.

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51. (Currently Amended) The system of Claim 28 29, wherein once the user has selected a sequence of ideographic characters, the user is presented with a list of sequences of one or more ideographic characters.
- 5 52. (Currently Amended) The system of Claim ~~50~~ 51, wherein said list of sequences is ordered according to the frequency of use based on a linguistic model.
- 10 53. (Currently Amended) The system of Claim ~~54~~ 52, where said linguistic model comprises at least one of:
- number of total keystrokes in an ideograph;
 - radical of ideograph;
 - radical and number of strokes of radical;
 - alphabetical order;
 - 15 frequency of occurrence of ideographic characters in formal or conversational written text;
 - frequency of occurrence of ideographic characters when following a preceding character or characters;
 - grammar of the surrounding sentence;
 - 20 application context of current character entry; and
 - recency of use or repeated use of ideographic characters by the user or within an application program.
- 25 54. (Currently Amended) The system of Claim 28 29, wherein one of said plurality of inputs is associated with a special wildcard input that is associated with zero or one of any of said strokes and said phonetic characters.
- 30 55. (Currently Amended) The system of Claim 28 29, wherein one of said plurality of inputs is associated with a special wildcard input that is associated with zero or one of said phonetic characters.

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56. (Currently Amended) A computer usable medium containing instructions in computer readable form for carrying out a process for Chinese text entry, said process comprising the steps of:

(a) entering an input sequence into a user input device;

5 wherein said user input device comprises:

a plurality of input means, each of said input means being associated with any of a plurality of strokes ~~or~~ and a plurality of phonetic characters, and an input sequence being generated each time when an input means is selected by a user into said user input device, wherein said user selection of said input means is alternatively associated with any of

10 said plurality of strokes and said plurality of phonetic characters;

~~data consisting of comprising~~ a plurality of input sequences and, associated with each input sequence, an input method specific database containing a plurality of input sequences and, associated with each input sequence, any of a set of phonetic sequences whose spellings correspond to the input sequence ~~or~~ and a set of strokes stroke sequences corresponding to the input sequence; and

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an ideographic database associated with both phonetic input and stroke input, said ideographic database containing a set of ideographic character sequences, wherein each ideographic character contains an ideographic index, a plurality of stroke indices to corresponding stroke sequences and a plurality of phonetic indices to corresponding phonetic sequences;

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(b) comparing the input sequence with said input method specific database and finding any of

25 stroke indices corresponding to matching strokes stroke entries, and
phonetic indices corresponding to matching ~~or~~ phonetic entries and said
~~matching stroke entries or phonetic entries;~~

(c) converting any of

said matching stroke indices to associated with said matching
stroke entries to matching ideographic indices; and

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said matching phonetic indices associated with said matching or
phonetic entries to matching ideographic indices;

(d) retrieving matching ideographic character sequences from said ideographic database by said matching ideographic indices; and

5 (e) optionally displaying one or more of said matched ideographic character sequences.

10 57. (Currently Amended) The medium of Claim ~~55~~ 56, wherein said stroke indices are indices of strokes sorted by stroke sequences in a stroke input system.

58. (Currently Amended) The medium of Claim ~~56~~ 57, wherein said stroke input system is a five-stroke or an eight-stroke system.

15 59. (Currently Amended) The medium of Claim ~~55~~ 56, wherein said phonetic indices are indices of phonetic characters sorted by actual spelling in a phonetic input system.

20 60. (Currently Amended) The medium of Claim ~~58~~ 59, wherein said phonetic input system is a Pinyin system or a Zhuyin system.

61. (Currently Amended) The medium of Claim ~~55~~ 56, wherein said phonetic indices are indices of input means in a phonetic input system.

25 62. (Currently Amended) The medium of Claim ~~55~~ 56, wherein the process further comprises the step of:

prioritizing stroke or phonetic sequences that match an input sequence and prioritizing ideographic character sequences that match a stroke or phonetic sequence according to a linguistic model.

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63. (Currently Amended) The medium of Claim ~~64~~ 62, wherein said linguistic model comprises at least one of:

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number of total keystrokes in an ideograph;
radical of an ideograph;
radical and number of strokes of a radical;
alphabetical order;

5 frequency of occurrence of ideographic character sequences, stroke sequences or phonetic sequences in formal, conversational written, or conversational spoken text;

frequency of occurrence of ideographic character sequences, stroke sequences or phonetic sequences when following a preceding character or
10 characters;

grammar of the surrounding sentence;

application context of current input sequence entry; and

recency of use or repeated use of stroke, phonetic or ideographic character sequences by the user or within an application program.

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64. (Currently Amended) The medium of Claim ~~55~~ 56, wherein said phonetic sequences comprise single syllables.

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65. (Currently Amended) The medium of Claim ~~55~~ 56, wherein said phonetic sequences comprise single and multiple syllables.

66. (Currently Amended) The medium of Claim ~~55~~ 56, wherein said phonetic sequences comprise user generated sequences.

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67. (Currently Amended) The medium of Claim ~~65~~ 66, wherein in absence of matching phonetic sequences in said database, a sequence of matching phonetic sequences is automatically generated based on single and optionally multiple syllable phonetic sequences.

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68. (Currently Amended) The medium of Claim ~~66~~ 67, wherein said sequence of matching phonetic sequences is narrowed down through user interaction.

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69. (Currently Amended) The medium of Claim ~~66~~ 67, wherein a sequence of matching ideographic character sequences is automatically generated based on matching phonetic sequences to ideographic character sequences.
- 5 70. (Currently Amended) The medium of Claim ~~68~~ 69, wherein a sequence of matching ideographic character sequences is narrowed down through user interaction.
- 10 71. (Currently Amended) The medium of Claim ~~64~~ 62, wherein the process further comprises the step of:
once an ideographic character sequence is selected, changing the associated priority of said matching phonetic sequence and sequence of ideographic characters.
- 15 72. (Currently Amended) The medium of Claim ~~55~~ 56, wherein the user can specify an explicit ideographic character separator.
- 20 73. (Currently Amended) The medium of Claim ~~55~~ 56, wherein the process further comprises the step of:
when the user enters a sequence of phonetic characters, returning a sequence of phonetic sequences of exact matches and predictions that partially match.
- 25 74. (Currently Amended) The medium of Claim ~~72~~ 73, wherein said sequence of phonetic sequences is ordered according to a linguistic model.
- 30 75. (Currently Amended) The medium of Claim ~~73~~ 74, wherein said linguistic model comprises at least one of:
number of total keystrokes in an ideograph;
radical of an ideograph;
radical and number of strokes of radical;
alphabetical order;

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frequency of occurrence of phonetic sequences or ideographic character sequences in formal or conversational written text;

frequency of occurrence of phonetic sequences or ideographic when following a preceding character or characters;

5 grammar of the surrounding sentence;

application context of current character sequence entry; and

recency of use or repeated use of phonetic sequences by the user or within an application program.

10 76. (Currently Amended) The medium of Claim 55 56, wherein the process further comprises the step of:

once the user has selected a sequence of ideographic characters, presenting the user with a list of sequences of one or more ideographic characters.

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77. (Currently Amended) The medium of Claim ~~75~~ 76, wherein said list of sequences is ordered according to a linguistic model.

20 78. (Currently Amended) The medium of Claim ~~76~~ 77, wherein said linguistic model comprises at least one of:

number of total keystrokes in an ideograph;

radical of an ideograph;

radical and number of strokes of radical;

alphabetical order;

25 frequency of occurrence of ideographic characters in formal or conversational written text;

frequency of occurrence of ideographic characters when following a preceding character or characters;

grammar of the surrounding sentence;

30 application context of current character entry; and

recency of use or repeated use of ideographic characters by the user or within an application program.

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79. (Currently Amended) The medium of Claim ~~55~~ 56, wherein the user can enter partial syllables for each of the multiple syllable words.
- 5 80. (Currently Amended) The medium of Claim ~~78~~ 79, wherein the number of partial keystrokes for each partial syllable is one.
81. (Currently Amended) The medium of Claim ~~55~~ 56, wherein one of said plurality of inputs is associated with a special wildcard input that is associated
10 with zero or one of any of said strokes and said phonetic characters.
82. (Currently Amended) The medium of Claim ~~55~~ 56, wherein one of said plurality of inputs is associated with a special wildcard input that is associated with zero or one of said phonetic characters.